



Tracking Conference

PHIN Message and Vocabulary Specifications

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Agenda



- PHIN Message Specifications and Vocabulary
 - Overview
 - Available Tools
 - Future Direction
- PHIN VADS Screen Demonstration



Overview



- Objective – Enable the exchange of consistent information among public health partners by fostering and promoting the use of standards-based messaging and vocabulary within PHIN systems

- PHIN Message Specifications
 - Case Notification
 - Laboratory
 - Outbreak Management
 - Countermeasure and Response Administration
 - Biosurveillance (BioSense)

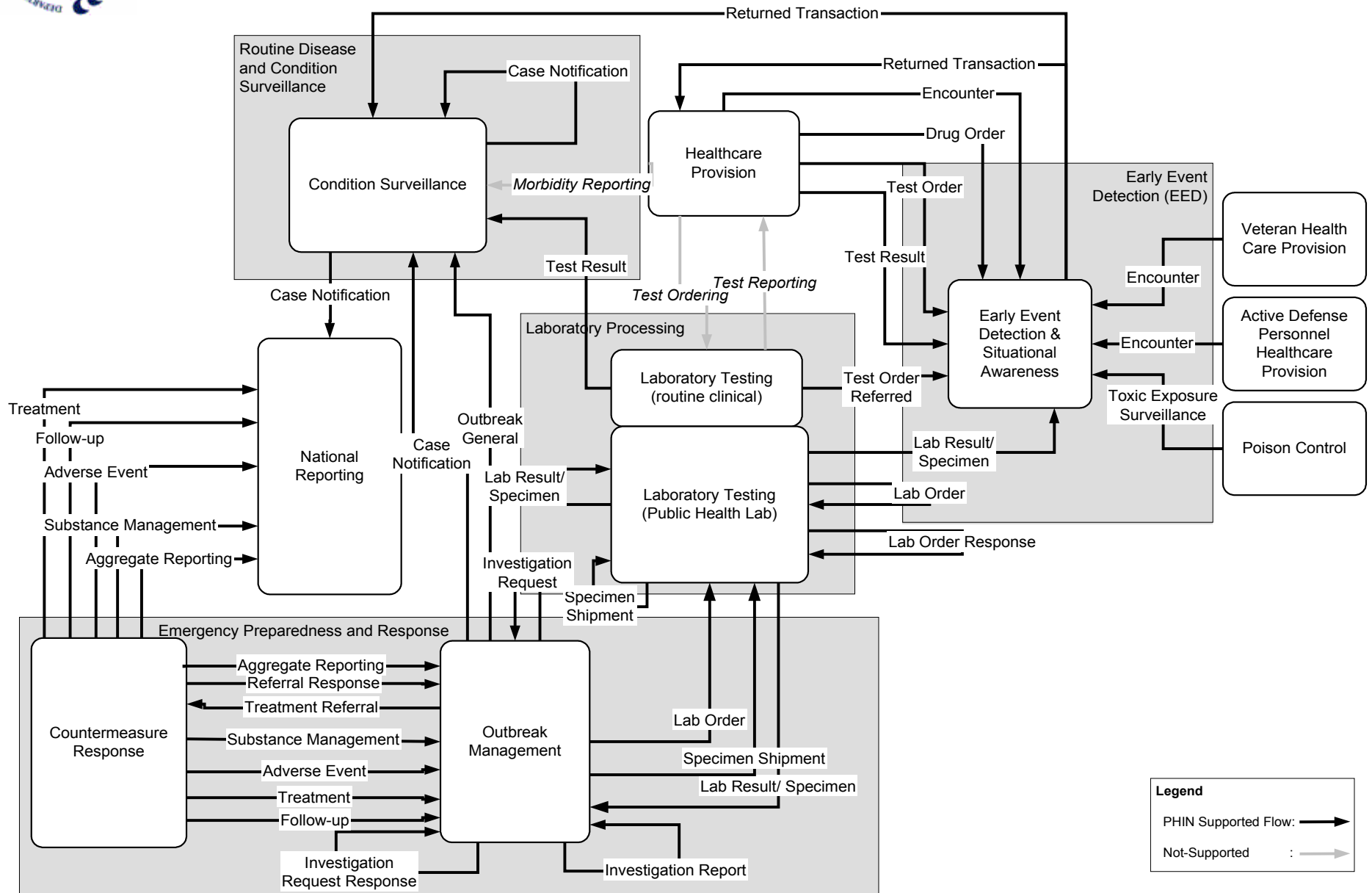
- PHIN Vocabulary
 - Emphasis on Vocabulary used in PHIN Messages
 - Utilize Consolidated Healthcare Informatics Initiated (CHI) vocabulary standards
 - Vocabulary published in PHIN Vocabulary Access & Distribution System (VADS)



Stakeholders



- CDC Centers (e.g., NCID, NCHS)
- Public Health Partners
 - State and Local Public Health Departments
 - Other Government Agencies: (e.g., NCI, VA, NLM, EPA, FDA)
 - Standard Development Organizations (SDOs): (e.g., HL7, CHI, SNOMED)
 - Collaboratives: (e.g., APHL, EPHTN, NHSN)

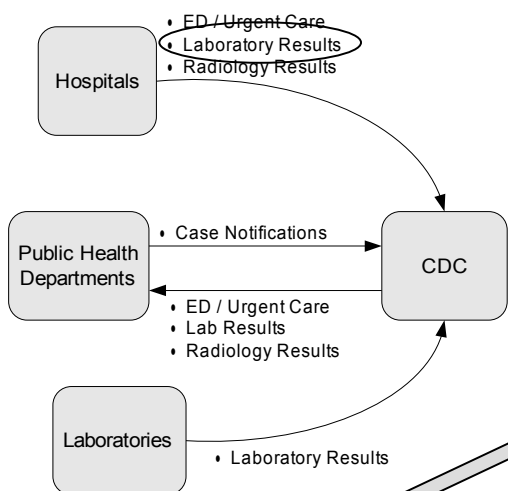




Messaging / Vocabulary - Enabling Interoperability



Information flows defined → Data elements defined → Messaging standards identified



Data Element	Description
Resulted Test Code/Name	Test code/description as known by the laboratory; identifies individual drugs tested at this level
Organism identified	Organism code/description when result is an organism
Test interpretation	Lab interpretation (non-micro) – "Abnormal", "High"
Test status	Status of susceptibility testing (individual test status such as prelim, final, corrected)
Additional ...	

Information Type	HL7 Message	
	Type / Trigger	Description
Laboratory Results	ORU^R01	Unsolicited Observation Message

HL7 standard message constrained for PHIN data requirements

Example of Microbiology Lab Results

Vocabulary constrained for message

Vocabulary standards identified → PHIN message specification developed

Vocabulary Domain	Vocabulary Standard
Resulted Test Code/Name	LOINC
Organism identified	SNOMED organism codes
Test interpretation	HL7 Abnormal Flags
Test status	HL7 result statuses
Additional ...	

Laboratory Result (Microbiology) – ORU^R01

HL7 Data Element	Description	HL7 Context Segment/Field	Vocabulary Standard
Resulted Test Code/Name	Test code/description as known by the laboratory; identifies individual drugs	OBX-3 Observation Identifier	LOINC Microorganism Tests
Organism identified	Organism code/description when result is an organism	OBX-5 Observation Value as coded result	SNOMED organism codes
Test interpretation	Lab interpretation (non-micro) – "Abnormal", "High"	OBX-8 Abnormal Flags	HL7 Abnormal Flags
Test status	Status of susceptibility testing (individual test status such as prelim, final, corrected)	OBX-11 Observation Status	HL7 result statuses of interest
Additional ...			

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PHIN Vocabulary Toolsets

- PHIN Vocabulary Server (PHIN VADS)
 - Allows searching and downloading of Vocabulary
 - Contains hundreds of coding systems and value sets used within PHIN
- PHIN Vocabulary Domain Standards
 - Identification of standard coding systems for domain areas (e.g., Organisms, Gender, Infectious Agents)
- Vocabulary Registration & Reconciliation (R&R) Process
 - Process to ensure that vocabulary is using appropriate coding system standards
 - Vocabulary stored in PHIN VADS must go through the R&R Process
- Object Identifier (OID) Registry
 - Stores and distributes identifiers for public health entities (e.g., Partners, Hospitals, Laboratories, NCPHI, Public Health Applications such as BioSense) through a web-based Object Identifier (OID) Registry
- Monthly CDC Vocabulary Community of Practice meetings



Next Generation Vocabulary Server

- Enable Ontologies and Knowledge Bases
 - Modeling how Public Health concepts interact. For example, chemicals, disease conditions, industries/occupations, exposure levels and transmission modes
 - Tie vocabulary to Ontologies and Knowledge Bases
- Enhance vocabulary management environment
 - Drag and drop vocabulary terms into vocabulary sets
 - Enhanced viewing and exploration of vocabulary
 - Enhanced relationship navigation
 - Directed graphs
- Allow vocabulary subscriptions and provide subscribers with alerts when new vocabulary is available
- Enable versioning of vocabulary and local extensions



PHIN VADS 2.1 Overview

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PHIN Vocabulary Access and Distribution System (VADS)

[VADS Home](#)[PHIN Vocabulary Home](#)[Help / Glossary](#)

PHIN Vocabulary Access and Distribution System (VADS)

The PHIN Vocabulary Access and Distribution System (PHIN VADS) is a set of tools within the PHIN Vocabulary Services (PHIN VS) that provides a coordinated means for stakeholders to access, distribute, and manage vocabularies. Note: *The PHIN VADS browser has been built to browse, download and search for single code sets and concepts. As such, robust navigation and hierarchical viewing are not available.*

PHIN Shared Vocabulary Home

Contains a list of vocabulary concepts commonly used within PHIN (e.g. Race codes, Gender codes).

[Search all Vocabulary](#)[PHIN Shared Vocabulary Home](#)

Application-based

Contains listings of vocabulary concepts associated with PHIN applications (e.g. NEDSS Base System, National Healthcare Safety Network).

[CHT](#)[PHIN NCMT](#)

Message-based

Contains listings of vocabulary concepts associated with PHIN messages (e.g. NND HL7 V3 Case Notification).

[Case Notification](#)[Preparedness & Response](#)[BioSense](#)

Standard-based Vocabularies

Contains a list of external standardized vocabularies from which PHIN vocabulary listings are drawn (e.g. HL7, LOINC).

[Standard Code Systems
\(SNOMED, FIPS, CDC\)](#)

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Browse & Search PHIN VADS



PHIN Vocabulary Access and Distribution System (VADS)

[VADS Home](#)[PHIN Vocabulary Home](#)[Help / Glossary](#)

PHIN Shared Vocabulary Home

PHIN Shared Vocabulary contains a list of all vocabulary concepts used within PHIN.
only extent version

Browse Vocabulary

Value Sets

A set of concepts used to specify valid values for PHIN coded data elements (E.g. Marital Status)

[Browse Value Sets>](#)

Code Systems

A controlled set of codes for designating concepts (E.g. SNOMED)

[Browse Code Systems>](#)

Domains

PHIN Vocabulary Domains specify a taxonomy of vocabulary concept types used within PHIN (E.g. Bacterium)

[Browse Domains>](#)

Search Vocabulary

Enter search text and select the vocabulary type to search. Searching is performed on a vocabulary's Code and Name.

Search for:**Search Within :**

- ☐ Value Sets
 - ☐ Value Sets Concepts
- ☐ Code Systems
 - ☐ Code System Concepts

[Advanced Search>](#)



Browse Value Sets



Value Set Code	Value Set Name	OID
PHVS AbnormalFlag HL7 2x	Abnormal flags Value Set	2.16.840.1.114222.4.11.800
PHVS AddressType HL7 2x	Address Type Value Set	2.16.840.1.114222.4.11.801
PHVS AdministrationDevice HL7 2x	Administration device Value Set	2.16.840.1.114222.4.11.802
PHVS AdministrationMethod HL7 2x	Administration method value set	2.16.840.1.114222.4.11.803
PHVS AdministrativeDiagnosis CDC ICD-9CM	Administrative Diagnosis (ICD-9 CM - Volume 1 & 2)	2.16.840.1.114222.4.11.856
PHVS AdministrativeGender HL7 V3	Administrative Gender	2.16.840.1.114222.4.11.926
PHVS AdministrativeProcedure ICD-9-CM FY2006	Administrative Procedure (ICD-9 CM - Volume 3)	2.16.840.1.114222.4.11.948
PHVS AdministrativeSex HL7 2x	Administrative sex Code System	2.16.840.1.114222.4.11.927
PHVS AdmissionLevelOfCareCode HL7 2x	Admission Level of Care Code	2.16.840.1.114222.4.11.912
PHVS AdverseEventPreviouslyReported CDC CRA	Adverse Event Previously Reported	2.16.840.1.114222.4.11.862
PHVS AdverseEventReportType CDC CRA	Adverse Event Report Types	2.16.840.1.114222.4.11.863
PHVS AgeUnit UCUM	Age Units - Duration	2.16.840.1.114222.4.11.878
PHVS AllergenType HL7 2x	Allergen Type	2.16.840.1.114222.4.11.806
PHVS Allergen CDC	Allergens (Drug, Food, Environmental)	2.16.840.1.114222.4.11.834
PHVS BloodPressureUnit UCUM	Blood Pressure Unit	2.16.840.1.114222.4.11.920
PHVS BodySite HL7 2x	Body site	2.16.840.1.114222.4.11.804
PHVS CONDITION_QUALIFIER	Patient's condition based on Chest X-Ray Finding	2.16.840.1.114222.4.11.1114
PHVS CXR RESULT	Chest X-Ray Results	2.16.840.1.114222.4.11.706
PHVS CaseContactType CDC CRA	Case Contact Type Value Set	2.16.840.1.114222.4.11.839
PHVS ChestXRayResult CDC	Chest X-Ray Results	2.16.840.1.114222.4.11.930

Result Pages: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [Next](#)



Basic Search – “Asthma” - Code System Concept

PHIN Shared Vocabulary: Code System Concepts List

Below are results 1 through 20 of 176 that match
“Asthma”.

[<<Back to PHIN Shared Vocabulary Home](#)

☒ Select individual Concepts for download

Download Selected Code System Concepts

Concept Code	Concept Name	Code System
<input type="checkbox"/> 18197001	Asthmatoid wheeze	SNOMED-CT
<input type="checkbox"/> 185736005	Asthma monitoring call telephone invite	SNOMED-CT
<input type="checkbox"/> 195972005	Extrinsic asthma NOS	SNOMED-CT
<input type="checkbox"/> 63088003	Extrinsic asthma without status asthmaticus	SNOMED-CT
<input type="checkbox"/> 373899003	Asthma daytime symptoms	SNOMED-CT
<input type="checkbox"/> 183478001	Emergency admission, asthma	SNOMED-CT
<input type="checkbox"/> 49391	ASTHMA W STATUS ASTHMAT	ICD-9-CM Volume 1 & 2 - Disease Classification
<input type="checkbox"/> 31387002	Exercise-induced asthma	SNOMED-CT
<input type="checkbox"/> 233679003	Late onset asthma	SNOMED-CT
<input type="checkbox"/> 170635006	Asthma not disturbing sleep	SNOMED-CT
<input type="checkbox"/> 182724005	Further asthma - drug prevention	SNOMED-CT



“Asthma” Concept Metadata - ICD-9 CM



Concept Code

Concept Name

Code System

☐ [49391](#) ASTHMA W STATUS ASTHMAT [ICD-9-CM Volume 1 & 2 - Disease Classification](#)

PHIN Shared Vocabulary: Concept Detail

Concept Code: 49391

[<< Back to PHIN Shared Vocabulary Home](#)

Concept Name: ASTHMA W STATUS ASTHMAT

Code System: [ICD-9-CM Volume 1 & 2 - Disease Classification](#)

 **Associated Value Set(s):** [Administrative Diagnosis \(ICD-9 CM - Volume 1 & 2\)](#)

Property Name	Property Value
<i>Date Created</i>	4/1/2005
<i>Date Revised</i>	7/28/2006
<i>ICD-9 CM Code with Decimals</i>	493.91
<i>Status</i>	Active



“Asthma” Concept Metadata - SNOMED CT

☐ [56968009](#)

Wood asthma

[SNOMED-CT](#)

PHIN Shared Vocabulary: Concept Detail

Concept Code: 56968009

[<< Back to PHIN Shared Vocabulary Home](#)

Concept Name: Wood asthma

Code System: [SNOMED-CT](#)

Associated Value Set(s): [Disease - Disorder](#)

Property Name	Property Value
<i>AUI</i>	A2985507
<i>CUI</i>	C0340094
<i>Date Created</i>	5/15/2006 0:00:00
<i>Date Revised</i>	5/15/2006 0:00:00
<i>SNOMED_Code_Alphanumeric</i>	D2-54262
<i>SNOMED_Description_ID</i>	94731013
<i>Status</i>	Active

Contains UMLS metadata & SNOMED Alpha Numeric

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Advanced Search – PHIN VADS



PHIN Vocabulary Access and Distribution System (VADS)

[VADS Home](#)[PHIN Vocabulary Home](#)[Help / Glossary](#)

User: [nobody](#) : [CDC Home](#) > [PHIN Home](#) > [PHIN VADS](#) > [Case Notification](#) > Advanced Search

Advanced Search

Fill in the search criteria below: term, data type to search within with optional criteria, and field to search by. Criteria will change based upon the data type you are searching. Then click Search.

Search Criteria

Search Term:

Exact Match of Text

or

Contains This Text

Search Within:

- ☐ Code Systems
 - ☐ Code System Concepts
- ☐ Value Sets
 - ☐ Value Sets Concepts
- ☐ Domains

Search by:

Search by

[Reset Search](#)[Search](#)

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Advanced Search of a concept - Restriction based on Code System



Search Term:

Exact Match of Text

or

Contains This Text

Georgia

Search Within:

☐ Code Systems

☒ Code System Concepts

Code Systems

Null Flavor (CDC)
Notification Types
FIPS 5-2 (State)
FIPS 6-4 (County)
Expanded Yes No Indicator
Order Control Codes
Diagnostic Service Section ID
Admission Level of Care Code
Body site
Educational Degree

Control Click to select multiple Code Systems for filtering.

Clear Code Systems

Search Result:

Case Notification: Code System Concepts List

Search within Code System Concepts that contain the code or name 'Georgia'

[<<Back to Case Notification Home](#)

☐ Select individual Concepts for download

Download All Code System Concepts

Concept Code

GA

Concept Name

Georgia

Code System

[FIPS 5-2 \(State\)](#)

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Advanced Search of Value Sets

- Restriction based on PHIN Vocabulary Domains



Search Term:

Exact Match of Text

or

Contains This Text

State

Search Within:

- ☐ Code Systems
- ☐ Code System Concepts
- ☒ Value Sets

Domains

All
Demographics
Clinical Encounters (ADT)
Laboratory Tests / Results
Organism (including Animals)
Units of Measure
Anatomy (Body Sites)
Disease / Clinical History / Observation (Finding)
Procedures (Non-Laboratory)
Medications (Drugs)

Control Click to select multiple Domains for filtering.

Clear Domains

Search Result

Case Notification: Value Sets List

Search within Value Sets that contain the code or name 'State'

[<<Back to Case Notification Home](#)

Download All Value Sets

Value Set Code

Value Set Name

OID

[PHVS_State_FIPS_5-2](#)

Federal Information Processing Standards Publication 5-2

2.16.840.1.114222.4.11.830

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